

THE CLAIMS

What is claimed is:

1. A process for manufacturing an ammunition article, comprising:
 - (a) providing a cartridge including a projectile disposed in a casing and presenting a joint between the projectile and the casing;
 - (b) applying to the joint a sealingly effective amount of a light-curable sealant composition; and
 - (d) exposing the applied sealant composition to curingly effective light.
2. The process of claim 1, wherein the light-curable sealant composition is devoid of anaerobic sealing component(s).
3. The process of claim 1, wherein the light-curable sealant composition is light-cured by exposure to said curingly effective light for an exposure time in a range of from about of 0.01 to 0.5 second.
4. The process of claim 1, wherein applying to the joint a sealingly effective amount of a light-curable sealant composition involves relative motion of the cartridge and an applicator dispensing the light-curable sealant composition to the joint.

5. The process of claim 4, wherein the cartridge is movably translated in relation to the applicator.
6. The process of claim 4, wherein the applicator is movably translated in relation to the cartridge.
7. The process of claim 4, wherein the applicator comprises an application device selected from the group consisting of syringe pump dispensers, roller coaters, doctor blades, hypodermic-type needle dispensers, and liquid-fed transfer devices.
8. The process of claim 4, wherein the applicator comprises a liquid-fed transfer device selected from the group consisting of liquid-fed brushes, sponges, swabs, pads, and cuffs, coupled in dispensing relationship with a reservoir for supply of the liquid sealant.
9. The process of claim 4, wherein the applicator comprises a hypodermic-type needle dispenser, in combination with a wiper element as a follower behind the hypodermic-type needle dispenser, arranged to exert a squeegee action on sealant dispensed from the hypodermic-type needle dispenser and to remove excess applied sealant.
10. The process of claim 1, wherein the curingly effective light comprises light selected from the group consisting of visible light, ultraviolet light, uv-visible light, infrared light and microwave radiation.
11. The process of claim 1, wherein the curingly effective light comprises ultraviolet light.

12. The process of claim 11, wherein the ultraviolet light has a wavelength in a range of from about 220 to about 375 nanometers.
13. The process of claim 1, wherein the curingly effective light is supplied by a source including a light-generating component selected from the group consisting of lamps, LEDs, photoluminescent media, down-converting and up-converting materials that respond to incident radiation in one electromagnetic spectral regime and responsively emit radiation of a longer or shorter wavelength, respectively, electrooptical generators, and lasers.
14. The process of claim 1, wherein the curingly effective light is supplied by an ultraviolet lamp.
15. The process of claim 1, wherein the sealant composition after exposure to the curingly effective actinic radiation, does not fluoresce.
16. The process of claim 1, wherein the light-curable sealant composition comprises a photocurable resin selected from the group consisting of unsaturated polyesters, epoxies, (meth)acrylates, urethane (meth)acrylates, (meth)acrylic ester monomers, oligoester acrylate-based compounds, epoxy acrylate-based compounds, polyimide-based compounds, aminoalkyd-based compounds, and vinyl ether-based compounds.
17. The process of claim 1, wherein the light-curable sealant composition comprises a photocurable resin selected from the group consisting of bisphenol epichlorohydrin epoxy resins, acrylic resins, urethane acrylate resins, acrylated polyester resins, and cycloaliphatic epoxides.

18. The process of claim 1, wherein the light-curable sealant composition comprises a photocurable resin and a photoinitiator therefor.
19. The process of claim 1, wherein the light-curable sealant composition comprises a formulation selected from the group consisting of free-radical curable acrylate resin-based formulations, and cationically curable epoxy-based formulations.
20. The process of claim 1, wherein the light-curable sealant composition comprises a free-radical curable acrylate resin-based formulation.
21. The process of claim 1, wherein the light-curable sealant composition comprises a cationically curable epoxy-based formulation.
22. The process of claim 1, wherein the light-curable sealant composition comprises a monomeric diluent.
23. The process of claim 1, wherein the light-curable sealant composition comprises a neat formulation of resin and photoinitiator.
24. The process of claim 1, wherein the light-curable sealant composition comprises a dye.
25. The process of claim 1, wherein the light-curable sealant composition comprises a photoinitiator in a concentration not exceeding 5% by weight, based on the weight of the composition.

26. The process of claim 1, wherein the light-curable sealant composition has a viscosity in a range of from about 75 to about 1000 centipoise (cps) at 25°C.
27. The process of claim 1, wherein after exposure to the curingly effective light, the tensile force required to separate the projectile from the casing is no more than 10% greater than the tensile force required to separate the projectile from the casing in the absence of the light-cured sealant composition.
28. The process of claim 1, wherein after exposure to the curingly effective light, the tensile force required to separate the projectile from the casing is no more than 5% greater than the tensile force required to separate the projectile from the casing in the absence of the light-cured sealant composition.
29. A process for manufacturing an ammunition article including a projectile in a casing presenting a projectile/casing interface, said process comprising forming a light-cured sealant coating at such interface.
30. The process of claim 29, wherein the light-cured sealant coating is formed by curing a photocurable resin with ultraviolet light curingly effective therefor.
31. An ammunition article including a projectile mounted in a cartridge casing presenting a projectile/casing interface, with the interface sealed by a light-cured sealant composition.